Evolution of Core Networks with IPv6
(The IPv6 Secure Deployment Opportunity)

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IPv6 Forum

- **International Forum to promote and drive IPv6 deployment (www.ipv6forum.com).**
- **Regional IPv6 Task Forces exist across the world.**
- **North American IPv6 Task Force supports the U.S. and Canada (www.nav6tf.org)**
- **Mission is to promote, influence, and provide technical/business expertise and guidance for the deployment of IPv6.**

Theoretical vs. Practical

- **The Internet has 36% of the IPv4 address space left vs. China or Mobile IP Cell Phones could use it up in one year.**
- **IPv4 and IPv6 use the same IPsec Protocol vs. IPv4-NAT prevents peer-to-peer security, and IPv6 supports peer-to-peer security.**
- **IPv4 has stateful autoconfiguration vs. the 101st Airborne Rangers require IPv6 stateless autoconfiguration at point of entry for an engaged operation.**

IPv6 vs. IPv4 analysis must be viewed from both a theoretical and a practical deployment perspective.

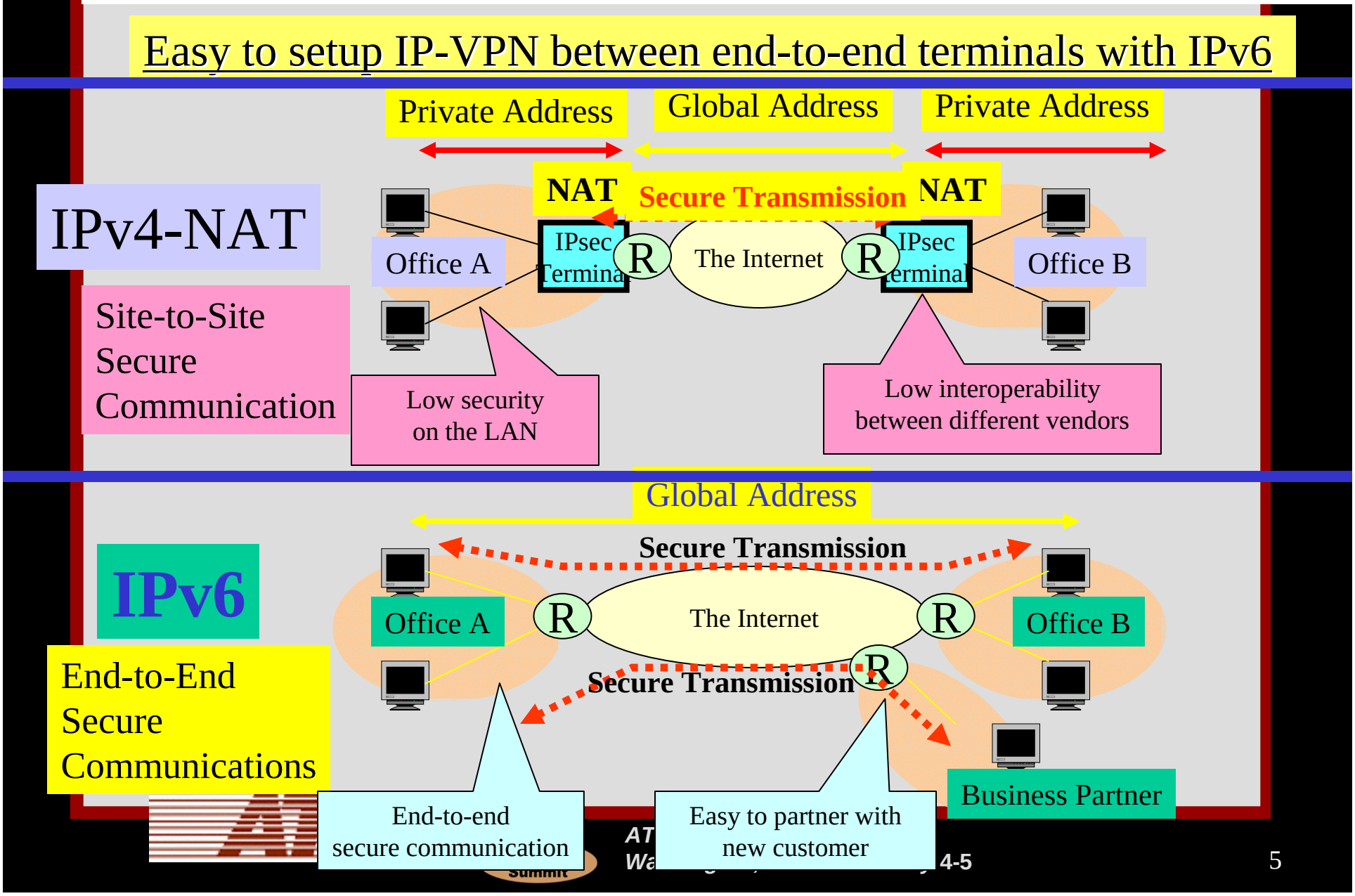
IPv6 Deployment Advantages

- **Larger Address Space (NAT is avoided and security IP address identification is in tact).**
- **Stateless Autoconfiguration of Addresses.**
- **Mobile IPv6 Security and Routing Optimizations.**
- **IPsec is MANDATORY for compliance.**

These are just some of the IPv6 advantages over IPv4 to increase the opportunity for a more secure deployment of Cyber Space for Home Land Defense, Military, Consumers, and Businesses in the U.S., and creates new business opportunity for Internet Service Providers

Large-Scale End-to-End Security

Easy to setup IP-VPN between end-to-end terminals with IPv6



IPv6 Business Case for Providers

- **Large scale Mobile IP device deployment cannot happen with an IPv4-NAT Internet service.**
- **Large scale peer-to-peer gaming for consumers with peer-to-peer security cannot happen with an IPv4-NAT Internet service**
- **Large scale U.S. wide Home Land Defense within Cyber Space cannot happen with an IPv4 NAT Internet service.**
- **Global business-to-business communications from the U.S. with Asia and Europe will require IPv6.**
- **The cost of not deploying IPv6 in the U.S. now is great.**

These are but a few of the growth opportunity markets for Providers in the U.S. Also see papers at URL below for other business cases.
http://www.nav6tf.org/slides/repository.html

The IPv6 Secure Deployment Opportunity

IPv6 Extended Standards Work

- **The core IPv6 standards, Mobile IPv6, and IPsec are ready for deployment.**
- **IETF Near Term Requirements:**
  - **Multihoming for IPv6**
  - **Authentication, Authorization, and Accounting (AAA)**
  - **Multicast Routing Protocols with Multicast Security**
  - **Additional IPv6 Transition Work**
- **3GPP Near Term Requirements:**
  - **Add IPv6 as requirement to core in 3GPP+ Release Strategy**
  - **Add Mobile IPv6 to core in 3GPP+ Release Strategy**
  - **Add 802.11b integration to 3GPP+ Release Strategy**
- **IEEE POSIX 1003 should be doing new APIs for IPv6 and Security not the IETF, but work with the IETF and 3GPP as liaison**

These need to be done in a time-to-market and expedient manner. These are not required to begin initial deployment of IPv6.